

Towards the Information System for Research Programmes of MESTD of the Republic of Serbia

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CRIS2016

Outline

- 1 Introduction
 - Science in Serbia
 - National CRIS
- 2 CRIS MESTD
 - Data model
 - Architecture
 - Implementation
 - Further development
- 3 Conclusion

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 - The Sector for Science
 - The Sector for Technological Development, Transfer of Technologies, and Innovation Systems
 - These two sectors are concerned with policies and realization of scientific research activities in the Republic of Serbia

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Law

- The Law on Scientific Research Activity - 2015
- Section VIII entitled Keeping records of documentation describes the way of recording data on Scientific institutions, Researchers, and Scientific projects
 - open access
 - machine readable
 - data privacy

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Strategy

- The Strategy of Scientific and Technological Development of the Republic of Serbia for the Period 2016-2020
- The basis for announcing the call for projects funded by the Ministry in the period of 2016-2020

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Research information systems

- There are numerous CRISs across Europe that are compatible with CERIF
- At the level of Serbia
 - institutional repositories (DSpace, EPrints)
 - Digital libraries of theses and dissertations
 - NaRDuS
 - Records of scientific workers of Vojvodina
 - CRIS UNS

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CRIS MESTD

- The MESTD decided to develop their own system for monitoring scientific research in the Republic of Serbia
- Specificities related to the legal regulations in Serbia
- The adoption of any ready-made solution would require its significant alteration
- Experience gained in development and using the institutional CRIS UNS system

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Core entities

- The CRIS MESTD data model is compatible with CERIF
- Three CERIF core entities cfOrgUnit, cfProj, cfPers, semantic layer, multilingual entities
- The model is expanded with the necessary data for the use of legal regulations of Serbia and keeping record of the project finances
- For instance, the entity ORGANISATION UNIT is extended with the attributes Last scientific accreditation number, Last scientific accreditation date, Institution name from the accreditation, Founder, Foundation date, Number of founding rescript.

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Server tier

- Part of the Server application is generated using JHipster tools
- Exposes REST services for the work with the basic entities
- Implements the program logic
- Enables work with users
- Performs storing and indexing of data on the entities

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- The MySQL database accessed via the ORM tool
- Indexing of entities (metadata and document contents) performed by the ElasticSearch server

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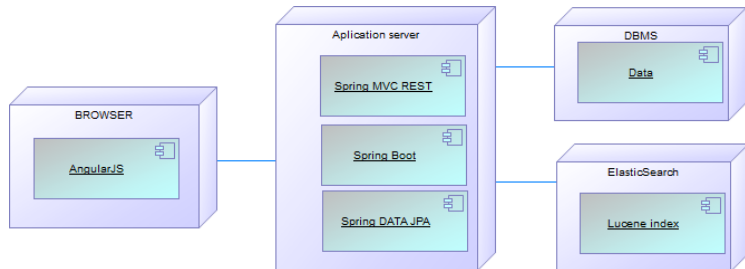
Client tier

- AngularJS, Bootstrap, and HTML5
- The client application uses the discovered REST services of the server applications, and, on the user's request enters data on the new entity, searches the existing entities, edits the data, creates a new user account, etc.

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Deployment diagram



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General information

- The user interface available in **Serbian** and **English** language
- The application is available only to authenticated users after providing user credentials (username and password)
- The registers of organisation units and researchers are available at <http://minis.mpn.gov.rs/registri> - 300 organisation units, 18,000 researchers
- The subsystem for application of scientific projects is available at <http://minis.mpn.gov.rs/projekti> - 800 project applications
- Three types of users

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Responsible institutional authority

- **Connected to an organisation unit**
- Edit data about the certain organisation unit
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- The form for editing data about an organisation is split into three sections: "BASIC DATA", "INFORMATION FOR REGISTER", "INFORMATION FOR PROJECTS"

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Responsible institutional authority

- The user can search, browse and export the list of researchers.
- The list can be sorted by researchers' first names, last names and birth dates
- The list can be also filtered by status of data
- The list can be edited by adding a new researcher, and by editing data about existed researchers
- Data about a researcher are grouped into four sections: "PERSONAL DATA", "INFORMATION FOR REGISTER", "INFORMATION FOR PROJECTS", "ENGAGEMENTS"

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- The user can search, browse and export the list of all organisation units
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- Submit a project proposal for funding by MESTD
- There is a call for projects funded by MESTD which is in accordance with The Strategy of Scientific and Technological Development of the Republic of Serbia for the Period 2016-2020
- The call has been announced for the following program areas:
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- A ministry officer responsible for that program area checks whether registered researcher fulfils all requirements for coordinating a project prescribed by the program call
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- Further development of CRIS MESTD and its phases will be based on the CRIS UNS development and users experience.

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Development of scientific research

- National Council for Scientific and Technological Development
- National Board for Accreditation of Research Organizations
- The Commission for Researchers' Promotion into Scientific and Teaching Positions
- Main Scientific Boards (MSBs)
- Serbian Association of Scientific Research Organizations
- The Ministry of Education, Science and Technological Development (MESTD)

The Serbian national repository of published and evaluated scientific research outputs

- It will be used in order to fulfil various needs of MESTD and scientific institutions
- The Serbian scientific institutions have to submit a periodic application for accreditation and annual self-evaluation report to MESTD
- A part of application documentation for self-evaluation and accreditation regarding published scientific research outputs will be generated automatically by CRIS MESTD
 - List of teachers which fulfil requirements to be Ph.D. advisors, as well as the ratio of the number of advisors and the total number of teachers
 - The number and list of SCI-indexed journal papers by years
 - Summary overview of scientific research outputs (publications) by years

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Promotions to scientific positions

- The promotion process will be supported by CRIS MESTD and part of the report regarding the scientific activity of a candidate for promotion will be generated automatically by CRIS MESTD.
- In a similar way, the project application and monitoring processes will be supported by CRIS MESTD generating scientific activities of project participants.
- Moreover, there are other activities that will be supported by this information system: analysis of published scientific research outputs; applications for internationally funded projects, etc.

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- The system complies with the guidelines of the euroCRIS organization, good practice of the known CRIS systems, and on the development of **CRIS UNS**
- The first phase deals with the implementation of the processes of keeping records related to **scientific institutions**, **researchers**, and **projects** funded by the Ministry

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Plans for Future Development

- The central part of CRIS MESTD will be implementation of a **national repository of published and evaluated scientific research outputs**
- The Repository will be used for the different purposes of the Ministry and scientific institutions such as Accreditation and self-evaluation of scientific research results. Obtaining scientific/academic titles, Application and monitoring of the projects, Analysis of published scientific research results, Application for international projects, etc.

Plans for Future Development

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Questions

- Thank you for your attention!!!
- If you have any questions, please do not hesitate to
 - ask me now
 - ask me during the conference breaks
 - contact me via email dragan.ivanovic@uns.ac.rs